

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Tidewater Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

City of Virginia Beach
Virginia Beach Landfill No. 2
Virginia Beach, Virginia
Permit No. TRO61322

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, the City of Virginia Beach has applied for a Title V Operating Permit for its Virginia Beach Landfill No. 2 facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: _____ Date: _____

Air Permit Manager: _____ Date: _____

Regional Deputy Director: _____ Date: _____

FACILITY INFORMATION

Permittee

City of Virginia Beach
2405 Courthouse Drive
Virginia Beach, Virginia 23456

Facility

Virginia Beach Landfill No. 2
1989 Jake Sears Road
Virginia Beach, Virginia 23464

AFS ID No.: 51-810-00105

SOURCE DESCRIPTION

SIC Code: 4953 – Virginia Beach Landfill No. 2 is a sanitary landfill located at 1989 Jake Sears Road in the City of Virginia Beach, Virginia. The landfill has been in operation since 1971. As a sanitary landfill regulated by the Commonwealth of Virginia, the landfill is permitted to accept only solid wastes, which are defined and regulated under the Commonwealth of Virginia Solid Waste Management Regulations. Such wastes are generated from the City of Virginia Beach and include general domestic waste, commercial waste, and construction debris. Ash generated from the Southeastern Public Service Authority Refuse-Derived Fuel facility in Portsmouth, Virginia, has been deposited at the landfill. Only non-liquid, non-hazardous, and non-infectious wastes are accepted at the landfill.

The landfill will eventually consist of multiple disposal areas including the Original Mound, Phase 1, Phase 2A, Phase 2B, Phase 3, and Phase 4. The Original Mound, which covers approximately 55 acres, was operated from 1971 to 1983 under Solid Waste Permit No. 367. In 1983, the landfill was expanded to include the Phase 1 area, which covers approximately 49 acres, under Solid Waste Permit No. 398 issued by the Division of Solid and Hazardous Waste Management. Subsequently, the City of Virginia Beach received a waste management permit from the Virginia Department of Environmental Quality (DEQ) - Waste Division to expand the landfill to include Phases 2A and 4 (1996 original - as amended). The request and approval to add Phases 2B and 3 is expected in the future. Phases 1, 2A, and 4, combined, cover approximately 134 acres. Potential future expansion into Phases 2B and 3 would be expected to add approximately 38 acres. These new phases have been designed using current technologies, including a composite liner system with a two-foot thick barrier layer overlain by a 60 mil thick high density polyethylene synthetic membrane, and a leachate collection system with a 0.25 inch thick composite drainage net overlain by an 18 inch thick drainage layer, among other components. The total lifespan of the new phases is approximately 40 years based on an estimated five percent increase in waste disposal per year starting in 1997.

An extensive landfill gas collection and control system is operated at Virginia Beach Landfill No. 2. This system includes extraction wells located throughout the Original Mound and Phase 1 disposal areas. Collected landfill gas is either combusted on-site in a flare or sent off-site for beneficial use. The operation of the landfill gas collection and control system is not required by applicable air quality regulations (Standards for Municipal Solid Waste Landfills under 40 CFR

Part 60, Subpart WWW) since the City has demonstrated that non-methane organic compound (NMOC) emissions are less than 50 megagrams per year based on Tier 2 testing completed in 1998 and 2003. In addition to the landfill gas collection and control system, the City also operates a leachate collection system, multiple diesel fuel-fired pumps (primarily for pumping water and maintenance purposes), a diesel fuel storage tank, and a small degreasing unit for maintenance purposes at Virginia Beach Landfill No. 2.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device Description (PCD)	PCD ID	Pollutant Controlled	Applicable Permit Date *
Fuel Burning Equipment / Utility Units							
DPs	-	Multiple diesel fuel-fired pumps	Varying	N/a	N/a	N/a	State Operating Permit dated 03/20/2003
Process Units							
MSW-1	-	Landfill operations	11.6 megagrams of municipal solid waste	Flare - LFG Specialties, Serial No. 1530 installed June 1998 rated at 2,000 scfm	F2	VOC, HAPs, NMOC, CO, NO _x , SO ₂ , PM-10	State Operating Permit dated 03/20/2003

EMISSIONS INVENTORY

A copy of the 2003 permit application emission inventory is attached. Emissions are summarized in the following tables.

2003 Actual Emissions

	2003 Criteria Pollutant Emission in Tons/Year				
Emission Unit	VOC	NMOC	SO ₂	PM ₁₀	NO _x
LFG Flare	(*)	0.09	0.67	0.89	2.15
Landfill Areas	(*)	8.33	--	--	--
Diesel Fuel-fired Pumps	1.05E-03	--	1.24E-03	1.33E-03	1.89E-02

(*) VOC emissions included with NMOC emissions.

2003 Facility Hazardous Air Pollutant Emissions

Pollutant	2003 Hazardous Air Pollutant Emission in Tons/Yr
Non-VOC/Non-PM ₁₀ HAPs	2.06

EMISSION UNIT APPLICABLE REQUIREMENTS - Emission Unit No. DPs - Multiple Diesel Fuel-Fired Pumps

Limitations

The facility has multiple diesel fuel-fired pumps used mainly for pumping stormwater from the site. In earlier versions of the State Operating Permit, the diesel pumps have been listed individually. The State Operating Permit was amended on March 20, 2003, to combine the pumps into a single category to maintain flexibility for the source. By combining the diesel pumps, an overall combined limitation of 145,500 horsepower-hours per year OR a combined throughput limitation of 7,430 gallons of diesel fuel per year was imposed in order to demonstrate compliance with the emission limitations for NO_x and CO in Condition III.A.3. The limitations are to be calculated monthly as the sum of each consecutive 12-month period.

The diesel pumps are subject to the opacity requirements of 9 VAC 5-50-80. Condition III.A.4. contains the applicable opacity limitations for the pumps of 20% opacity as determined by EPA Method 9 except during one six-minute period in any one hour in which visible emissions shall not exceed 30% opacity.

Monitoring and Recordkeeping

Condition III.B.1. of the Title V permit provides for periodic visible emissions monitoring of the diesel pumps once per operating day utilizing EPA Method 22. If using Method 22 the observer notes an opacity condition that exceeds 50% of the applicable standard (10% opacity), a Method 9 visible emissions evaluation shall be undertaken. A Method 9 evaluation will not be required, however, if the visible emissions condition is corrected in a timely manner, the emissions unit is operating at normal operating conditions, and the cause and corrective measures taken are recorded in a logbook.

Condition III.B.2. of the Title V permit specifies recordkeeping requirements. Such records include the annual hours of operation of the diesel pumps in horsepower-hours per year OR the annual combined throughput of diesel fuel, calculated monthly as the sum of each consecutive 12-month period; and records of each visible emissions observation. Combined annual hours of operation in horsepower-hours per year or combined diesel fuel throughput are indicators of compliance with the annual emissions limitations from the combined units of NO_x and CO. Emission limitations are based on combined annual hours of operation and AP-42 emission factors (AP-42, Table 3.3-1, Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines, SCC #2-02-001-02).

Testing

The permit does not require source tests. A table of test methods has been included in the permit if testing is performed. The Department and EPA has authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

EMISSION UNIT APPLICABLE REQUIREMENTS - Emission Unit No. MSW-1 - Landfill Operations

Limitations

The facility has a design capacity limitation on the landfill of 11,035,531 megagrams and, as such, is subject to the requirements of NSPS Subpart WWW.

Monitoring and Reporting

At this time, NMOC (non-methane organic compound) emissions from the landfill remain below the 50 megagram per year threshold that triggers the installation of an NSPS Subpart WWW landfill gas collection and control system. The facility is required to submit an annual NMOC emission rate report to DEQ no later than April 15th of each calendar year outlining the previous calendar year's actual NMOC emissions. If any annual NMOC emission rate report determines that annual emissions have reached or exceeded 50 megagrams, the facility will be required to install a landfill gas collection and control system in accordance with the requirements of NSPS Subpart WWW or demonstrate using site-specific NMOC concentrations or a site-specific methane generation constant that the 50 megagram NMOC threshold has not been exceeded by the landfill.

Recordkeeping

The permittee is required to maintain records of all emission data and operating parameters necessary to demonstrate compliance with the Title V permit. For the landfill operations (MSW-1), these records shall include records of current maximum landfill design capacity, current amount of refuse in place, and annual (calendar year) refuse accumulation rates; description, location, amount, and placement of all non-degradable refuse including asbestos and demolition debris placed in landfill areas and which are excluded from landfill gas estimation; and the installation dates and locations of all vents, wells, and flares.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions

B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §§2.1-20.01:2 and §§10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement NO. 3-2001".

F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

Y. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

STATE-ONLY APPLICABLE REQUIREMENTS

The following Virginia Administrative Codes have specific requirements only enforceable by the State and have been identified as applicable by the applicant:

1. 9 VAC 5 Chapter 40, Part II, Article 2. Emission Standards for Odor (Rule 4-2)
2. 9 VAC 5 Chapter 60, Part II, Article 5. Emission Standards for Toxic Pollutants from New and Modified Sources (Rule 6-5)

FUTURE APPLICABLE REQUIREMENTS

None identified at this time.

INAPPLICABLE REQUIREMENTS

40 CFR 60, Subpart Kb no longer applies to the 20,000-gallon fuel oil storage tank (Unit No. T-6) because the vapor pressure of the stored VOL is below 15 kPa. Therefore, Condition 6 of the 3/20/03 State Operating Permit has been streamlined out of the Title V permit.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation 9 VAC 5-80-720 A, or B, or C	Pollutant(s) Emitted (if applicable to 9 VAC 5-80-720 B)	Rated Capacity (if applicable to 9 VAC 5-80-720 C)
F-2	Flare (2,000 scfm)	5-80-720 A.1.	CO, NMOC, VOC, HAPs, NO _x , SO ₂ , PM-10	69.6 MMBtu/hr
LCS-1	Leachate Collection System (including manholes, leachate equalization basin, and pump station)	5-80-720 B.	VOC	45.4 gallons of leachate per minute

DU-1	Degreasing System, 40" x 38" tank	5-80-720 C.4.c.	VOC	40" x 38" tank
T-6	Diesel fuel storage tank	5-80-720 C.	VOC	20,000 gallon tank

¹The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

The proposed permit was placed at public notice in the Norfolk *Virginian-Pilot* from August 13, 2004 to September 12, 2004. No public comments were received during the public notice period.